

## **LOW SULFUR** FUEL OIL PUMP (LSFO)

### Screw Pumps & Systems

- New environmental regulations for fuel oil since 1 January 2015!
- Sulfur content in marine fuel further decreased to 0.1% in Emission Control Areas (ECAS)!
- In 2020 a global restriction of max. 0.5% will come into effect!

#### **THE ECAS ESTABLISHED ARE:**

- Baltic Sea area – as defined in Annex I of MARPOL;
- North Sea area – as defined in Annex V of MARPOL;
- North American area (entered into effect 1 August 2012) – as defined in Appendix VII of Annex VI of MARPOL;
- United States Caribbean Sea area (entered into effect 1 January 2014) – as defined in Appendix VII of Annex VI of MARPOL.

### **THE CHALLENGE**

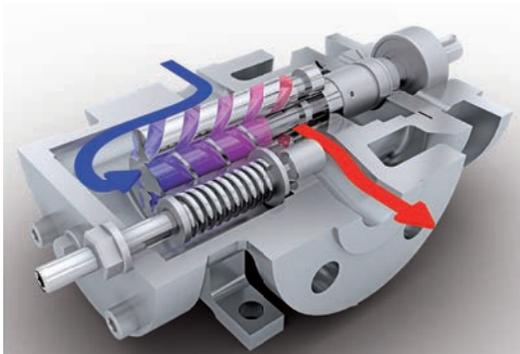
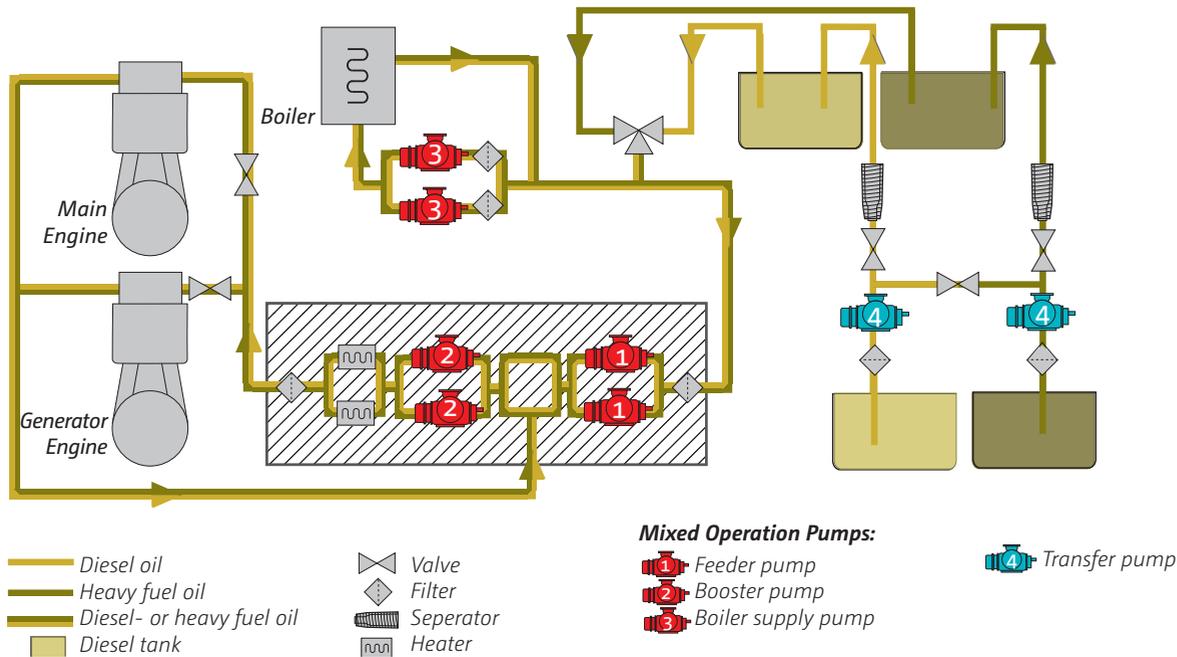
Reducing the sulfur content reduces viscosity and additionally generates poor lubricity of the fuel, especially when operating with Low Sulfur Diesel Fuels (MDO/MGO). The combination of these two aspects has negative impact on the correct functioning of 3 spindle screw pumps in a fuel system. At a too low viscosity the lubricating fluid film between the spindles and the pump housing becomes inadequate. The danger of metallic contact between spindles and housing, with jamming of the pump as a result, is highly increasing.



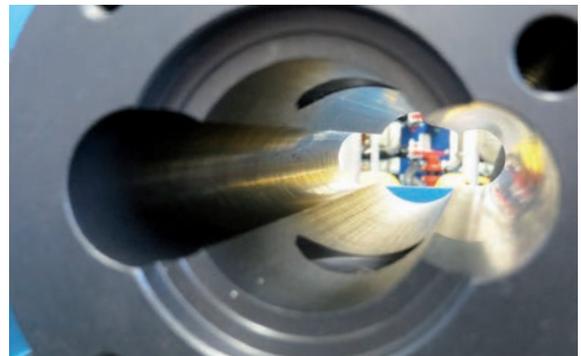
## THE SOLUTION

Leistritz has developed and tested an adequate surface treatment for pump housings and a custom finish of the spindles for the 3-spindle screw pump series to deal with above challenges. The wetted parts with this special treatment are able to handle both fuels as Heavy Fuel Oil (HFO) and Low Sulfur Diesel Fuels (MDO/MGO), also in dual-fuel applications.

### FUEL OIL SUPPLY SYSTEM



Example L3NG



View into pump housing/liner

### APPLICATIONS AND PERFORMANCE DATA

Application: Fuel supply pump for diesel engines and boilers  
 Fluid: Low Sulfur Diesel Fuel Oil (LSFO/MDO/MGO) and Heavy Fuel Oil (HFO)  
 Viscosity: Down to 1,5 mm<sup>2</sup>/s  
 Pressure: Up to 30 bar  
 Pump type: L3NG/L3MF/L3MG with materials according to manufacturer's selection

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### CONSTRUCTION MATERIALS

Pump housing/liner: EN-GJS-400-15 (0.7040) with special surface treatment  
 Spindles: 16MnCr5 (1.7139) nitrided with special finish